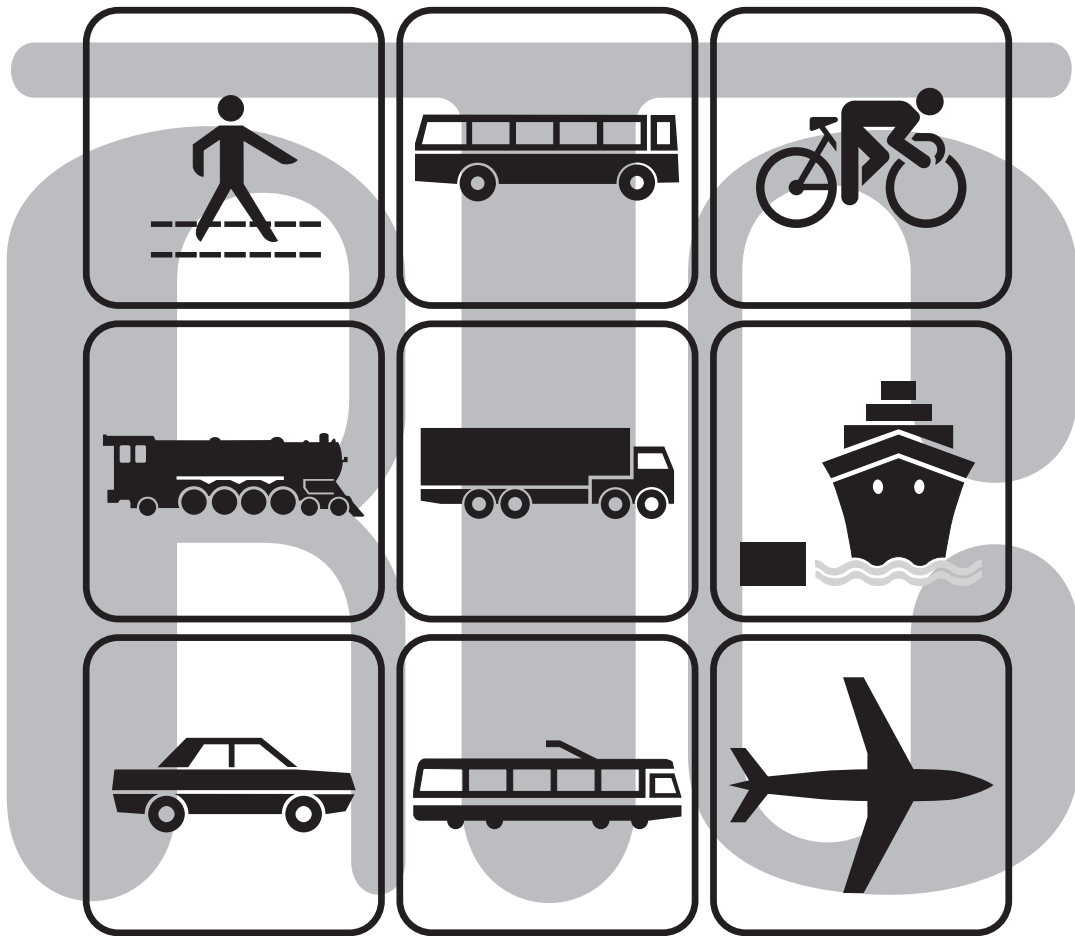


Metropolitan Transportation Plan for Clark County



**Updated: December 2002
Amended: December 2003**

Southwest Washington Regional Transportation Council

CHAPTER 5

SYSTEM IMPROVEMENT AND STRATEGY PLAN

OVERVIEW: DEVELOPMENT OF A BALANCED REGIONAL TRANSPORTATION SYSTEM

This chapter summarizes the solutions and strategies needed to provide an adequate level of regional mobility and accessibility over the next 20 years and to support the Growth Management Act land use goals for the region. A wide range of solutions and strategies are needed to meet regional travel demand. There are strategies to address the travel demand side as well as transportation system supply side, strategies to increase the efficiency of the existing regional transportation system as well as strategies to provide for capacity expansion to accommodate growth, solutions requiring physical construction and solutions requiring planning applications with consideration for multiple transportation modes. In developing a balanced regional transportation system it is not only capacity deficiencies that must be addressed but also preservation and maintenance of the existing regional transportation system, as well as plans to make for a safer regional transportation system for mobility of people and freight. All transportation modes are to be addressed. Development of a balanced regional transportation system with reduced dependence on the single occupant vehicle (SOV) relies on development of alternative modes of transportation, changed land use densities and patterns and/or changes in lifestyle. The chapter concludes with a map showing transportation system capacity expansion improvements included in the MTP.

MAINTENANCE OF THE EXISTING REGIONAL TRANSPORTATION SYSTEM

Of prime importance in the planning for the regional transportation system is the need to maintain the existing system. Maintenance addresses the day-to-day activities needed to keep the transportation system in good working order; daily operations that keep the system safe, clean, reliable and efficient. Such activities include incident response, filling potholes, repairing bridges, drainage ditches, guardrails, plowing snow, removing rocks, and efficiently operating traffic signals. The Washington State Department of Transportation (WSDOT) and local jurisdictions monitor the condition and operation of the existing system and program projects to maintain the system. The *MTP* supports the routine, regularly-scheduled and necessary maintenance work identified by local jurisdictions. The MTP supports maintenance being given high priority in the programming of transportation funds.

PRESERVATION OF THE EXISTING REGIONAL TRANSPORTATION SYSTEM

Preservation of the existing regional transportation system is also important to protect the heavy investments already made in the system. Preservation can prolong the life of the existing transportation system through such projects as repaving roads, rehabilitating bridges, seismic retrofit and rock fall protection. Preservation needs are identified through the Pavement Management System (PMS) and local needs analysis and the MTP is highly supportive of giving prime consideration to such project needs.

BRIDGE DEFICIENCIES

Maintenance and preservation projects required on bridges are identified through the Bridge Management System (BMS) managed by WSDOT. Some bridges on the Clark County highway system include: I-5 bridge crossings at the Columbia River, Salmon Creek, NE 129th Street, NE 134th Street, East Fork Lewis River and Lewis River; SR-14 crossings at West Camas Slough and Lawton Creek; SR-501 crossing of the rail lines in Vancouver, SR-503 crossings of Cedar Creek,

Salmon Creek, Chelatchie Creek and the Lewis River at Yale; the La Center Bridge and Heisson Bridge.

SAFETY DEFICIENCIES

Accidents, their number, location, and type, are monitored by WSDOT and local jurisdictions and if there is deemed to be a safety deficiency then remedial measures are considered and corrective action taken. The MTP supports regional system safety projects identified through the ISTEA-required Safety Management System (SMS) and local plans and programs to correct safety deficiencies on the regional transportation system.

Measures to improve the safety and security of the transit system for transit passengers and employees have been implemented by C-TRAN in keeping with Federal Transit Administration's Strategic Plan (see Chapter 3).

ECONOMIC DEVELOPMENT AND FREIGHT TRANSPORTATION

The prosperity of a region is dependent on the provision of transportation infrastructure to support economic development. Economic development emerged as the prime evaluation criteria for prioritizing MTP projects in the MTP Regional System Improvements and Prioritization Process. Economic development stimulus is also a significant focus in the update to the Comprehensive Growth Management Plan for Clark County now underway.

FREIGHT TRANSPORTATION

Highway freight transportation needs were addressed in a regional freight transportation study undertaken during 1993 to identify regional freight transportation issues and to investigate data availability and needs regarding freight transportation. The results of the study are documented in *Southwest Washington Regional Freight Transportation Study, Final Report* (December, 1993; RTC/JHK & Associates). The Study noted the shortage of data relating to freight transportation. The report also noted the need for improved access to the Port of Vancouver via the Mill Plain Extension. The Mill Plain Extension project was subsequently completed in 2000. There is need for data relating to transportation of freight through the region, freight delivery within the region and freight origins and destinations. The WSDOT-developed Intermodal Management System (IMS) provides input on regional intermodal needs. The community has noted a concern about the transportation of hazardous materials on the transportation system. WSDOT adopted a Statewide Freight and Goods Transportation System (FGTS) in 1995 that categorizes highways and local roads according to the tonnage of freight they carry. The FGTS was updated prior to the 1998 legislative session. Washington State also created the Freight Mobility Strategic Investment Board (FMSIB) with a mission to create a comprehensive and coordinated state program to facilitate freight movement between and among local, national and international markets which enhances trade opportunities. The Board is also charged with finding solutions that lessen the impact of the movement of freight on local communities. The Board will propose policies, projects, corridors and funding to the legislature to promote strategic investments in a statewide freight mobility transportation system.

FREIGHT RAIL

In 1990 the Washington State Legislature defined the purpose of the state's freight rail program and planning activities and established a comprehensive freight rail policy. They directed WSDOT to maintain and improve the freight rail system in the state through better freight rail planning, better cooperation to preserve rail lines, and increased financial assistance from the state. In 1995 the Legislature broadened the focus of the WSDOT Freight Rail Program to include not only light density lines and rail corridor preservation, but also mainline congestion and port access. The *Washington State Freight Rail Plan* provides detailed information about the state rail system, state freight rail programs and projects, rail line analysis, and funding priorities for the future.

A study, commissioned by the Port of Portland to support Metro's Region 2040 planning activities, suggests that freight rail transportation will increase significantly in the region during the MTP planning horizon. More recently freight rail needs in the Portland-Vancouver region were addressed as part of the I-5 Transportation and Trade Partnership. The Partnership concluded that several low-to-medium cost solutions can significantly improve existing rail capacity. One such "incremental improvement" is a proposed two-main track bypass around BNSF's Vancouver Yard. The Portland-Vancouver region "incremental improvements" are sufficient to address capacity needs for approximately 5 to 10 years given a growth rate of 1.625% to 3.25% per year. Beyond this additional improvements will be required that will require further study to fully identify. WSDOT has proposed the Vancouver Rail Project that would add new Vancouver Yard rail bypass tracks and improve or close the West 39th Street at-grade crossing. The intent of the Vancouver Rail Project would be to increase safety, reduce rail congestion, and improve the on-time performance of Amtrak's passenger rail service.

MARINE FREIGHT

Freight also travels to and from our region via the Columbia River. As noted in Chapter 3 (page 3-15) the primary marine port in Clark County is the Port of Vancouver, located on the Columbia River. The Port emphasizes the importance of channel depth to its activities. The current channel depth limits service from ocean-going vessels, making it difficult for shippers to transport goods cost-effectively, especially if the vessels cannot be loaded to maximum capacity to sail out of the Columbia River. A \$188 million project involves deepening the 40-foot navigation channel to 43 feet for 106 miles between the mouth of the Columbia River to the Port of Vancouver. A deeper channel will allow larger ships to import and export cargo more efficiently that will benefit trade. Nearly 40 percent of the nation's wheat is exported down the Columbia River, affecting farmers in the region and across the nation.

AIR FREIGHT

As noted in Chapter 3 (page 3-16), the Clark County region relies on access to the Portland International Airport in Oregon for air freight needs.

NON-MOTORIZED MODES

The Regional Transportation Plan supports the development of pedestrian and bikeway facilities to access the transit system and for use as alternative transportation modes. Reduced reliance on automobiles is largely dependent on the development of adequate sidewalks and bikeways to access activity centers and to allow for intermodal connections in use of the transit system. The

development of non-motorized transportation modes is a strategy that will maximize the capacity of the existing transportation system. Sidewalk and bicycle path/lane projects are most appropriately identified at the local level and can be prioritized through the regional transportation programming program if in competition for regional funding. Local jurisdictions within Clark County are giving more emphasis than in previous programs to non-motorized projects in efforts to redress the balance in transportation system development from highway and auto dependence to provision of alternative modes.

BICYCLE TRANSPORTATION

Clark County has convened a Bicycle Advisory Committee to identify and prioritize needed bike projects. In addition, jurisdictions in Clark County have addressed the need for bicycle and pedestrian projects in their Comprehensive Growth Management Plans and in the *Clark County Trails and Bikeway System Plan* (December 1992; Clark County). Notable pedestrian and bicycle projects in Clark County include completion of the City of Vancouver's Columbia River Waterfront Trail, the Discovery Trail, the Columbia River/Evergreen Highway Trail, Hazel Dell Avenue bike lanes and SE 164th Avenue bike lanes. Also of regional significance is improvement bicycle facilities which will improve access to transit facilities. Bike racks are already provided on C-TRAN fixed-route buses and bike lockers are provided at C-TRAN Transit Centers and Park and Rides. Clark County produces a map showing bicycle facilities and routes throughout the County. The most recent version of "Cycling Clark County" was published in July 2000.

PEDESTRIAN TRANSPORTATION

Local jurisdictions program projects to provide for better connectivity in the pedestrian walkways throughout Clark County. The City of Vancouver has also embarked on a program to install curb cuts for better sidewalk accessibility. Pedestrian facilities are also important for access to transit.

Both bicycle and pedestrian facilities are integral design elements in highway projects. As roads are upgraded throughout the County then bicycle and sidewalks are added.

TRANSPORTATION DEMAND MANAGEMENT (TDM)

The MTP supports TDM as a strategy to maximize the efficiency of the existing transportation system. Transportation demand management strategies to reduce vehicle trips on the regional transportation system can include use of transit, carpooling, vanpooling, working of flexi-hours and/or compressed work week, and working from home with use of communications technology, known as telecommuting. A list of many TDM strategies is outlined in Table 5-1. Such TDM strategies will become increasingly important as travel demand in the region continues to grow and transportation investments do not keep pace. TDM strategies can help to preserve transportation system capacity and RTC Board direction is to promote the use of such strategies throughout the Clark County region.

Local jurisdictions have implemented the Washington State **Commute Trip Reduction** law passed by the Washington State legislature in 1991 as a TDM tool. The law requires that local jurisdictions with major employers adopt a Commute Trip Reduction Ordinance and that employers who have 100 or more employees arriving at work between 6 a.m. and 9 a.m. should establish a commute trip reduction program for their employees. All affected Clark County jurisdictions have adopted CTR ordinances. The Law's established goals were amended by the 1997 state legislature. The defined

goals were to have major employers reduce commute trips from the 1993 base year by 15% by 1995 or two years after program implementation, 20% by 1997 or four years after program implementation, 25% by 1999 or six years after program implementation and to achieve 35% reduction by 2005 or twelve years after program implementation. When new employers are brought into the program, the goals are a reduction of 15% after two years, 20% after four years, 25% after 6 years, and 35% after twelve years. Currently, there are fifty affected employers in Clark County. Another seven employers participate voluntarily in the program. The 1999 statewide CTR survey indicates that the number of employees at participating worksites totaled 19,576 in 1993 and increased to 22,495 in 1999.

A list of potential strategies for implementation in Clark County is contained in Appendix A2 of the MTP; *"MTP Strategies: Projects to Preserve System Capacity, including Transportation Demand Management (TDM) Strategies"*. Monitoring of the effectiveness of TDM is necessary to provide input to the regional travel forecasting modeling process.

Table 5-1: Outline of Transportation Demand Management Strategies

Outline of Transportation Demand Management Strategies	
Type	Description
Education	Transport agencies, professionals and the public consider and understand TDM
TDM Marketing	Provide public information and encouragement programs
Commute Trip Reduction (CTR) Programs	Employee commute trip reduction programs
TMA's	Transportation Management Associations provide trip reduction services in a commercial or employment center
Manage Special Transport Activities	Manage special types of transport and special events for efficiency
Financial Planning	TDM competes against capacity expansion in terms of cost effectiveness
Transportation Allowance	Provide commuter with a transportation allowance rather than free parking
Transit Improvements	Improved public transit service
Park and Ride	Parking at urban-fringe transit stops
Vanpool Programs	Promotion/organization of vanpools
Rideshare Programs	Rideshare promotion and matching
HOV Preference	Transit and rideshare lanes and other priority measures
Free Transit Zones	Free transit in commercial centers
Bicycle Improvements	Improved bicycle planning and facilities
Intermodal Bike	Bike lockers at transit stops, bike racks on transit vehicles
Telecommuting	Working at home to avoid commute trips
Alternative Work Hours	Flex time and alternative work weeks (such as 4 10-hour days)
Guaranteed Ride Home	Provide a limited number of free rides home for transit and rideshare commuters
Security	Address security concerns of rideshare, transit, cycle and pedestrian commuters
Parking Pricing	Charge users directly for parking. Charge by the hour or day rather than the month
Full Cost Pricing	Pricing reforms to encourage efficient transport

Outline of Transportation Demand Management Strategies	
Type	Description
Road Pricing	Road tolls and congestion pricing
Mileage Fees	Per-mile charges for road use and/or distance-based vehicle insurance and registration fees
Fuel Taxes	Increase federal and state fuel taxes
Vehicle Restrictions	Prohibit vehicle use in specific areas
Cash Out Parking	Provide employees who do not drive the cash equivalent of parking subsidies
Reduce Parking Requirements	Reduce parking requirements in zoning laws
Preferential Parking	Preferential parking for rideshare vehicles
Vehicle Rentals	Encourage carshare cooperatives and neighborhood vehicle rentals
Land use Reforms	Higher density, mixed use, growth management
Neotraditional Planning	Develop neighborhoods that encourage walking bicycling and transit use
Traffic Calming	Use strategies to reduce vehicle traffic speeds when appropriate
Monitor TDM	Perform surveys and other monitoring of TDM program effectiveness

The I-5 Partnership in 2002 concluded that Transportation Demand Management (TDM) and Transportation System Management (TSM) are essential strategies for improving our mobility. TDM is about reducing auto trips, shortening some, eliminating others and making our transportation system more efficient. Costs and effectiveness for the most promising TDM/TSM actions were not quantified as part of the I-5 Partnership due to the interrelated nature of the activities. More planning for TDM implementation is likely to be carried out through 2002/2003.

A new TDM strategy was implemented in the region in 2002. CarpoolMatchNW.org provides a secure, online matching service that allows people in Clark County, Portland and Salem to find others who are interested in sharing a ride to work.

TRANSPORTATION SYSTEM MANAGEMENT (TSM)

TSM is also a strategy to maximize the efficiency of the existing transportation system. In 1993, a study to investigate the feasibility of various transportation system management strategies was conducted by ODOT. The ODOT Advanced Transportation Management System (ATMS) study was coordinated with WSDOT and included analysis of traffic surveillance, traffic control and traveler information needs in the I-5, I-205, SR-14 and SR-500 corridors. TSM measures include a wide range of strategies, most of which are ITS related to an intelligent transportation system. These include an incident response program, increased signage to alert motorists of travel conditions, ramp metering, improved communication means, Intelligent Vehicle/Highway System (IVHS) projects, and traffic signal interconnects to improve the efficiency of operation of the regional transportation system. Other TSM elements include minor capital upgrades such as channelization of traffic at intersections. The need for ramp metering on some of the interchange ramps, with greatest need in the I-5 corridor, has been identified in the WSDOT Systems Plan component of the *Statewide Multimodal Transportation Plan*.

Like TSM, ITS is also part of the transportation tool kit to better manage the transportation system. The key difference is the ITS uses real time information to integrate and manage conventional

transportation system components such as roads, transit, ramp meters, traffic signals, and managing incidents for more efficient operations and performance. ITS uses advanced technology and information to improve mobility and productivity and enhance safety on the transportation system.

The Vancouver Area Smart Trek program was initiated in 1999 and completed in January 2001. It was developed through a partnership of transportation agencies working together to plan, develop and implement an intelligent transportation system for the Clark County region to improve the operation, safety, and efficiency of the transportation system. This effort is being coordinated with the Oregon Department of Transportation to ensure that ITS strategies throughout the bi-state region are integrated and complementary. There is also a VAST Steering Committee made up of the Southwest Washington Regional Transportation Council, the City of Vancouver, the Washington State Department of Transportation, C-TRAN, Clark County, the City of Camas, and The Oregon Department Of Transportation to facilitate the coordination, planning, funding, and deployment of ITS projects. This committee will promote the integration of the projects, the communications system, and the operation of ITS system elements. The VAST Program contains the following seven initiatives that, together, are intended to improve the efficiency of the transportation system:

Communications Infrastructure - Communications infrastructure is the backbone for all ITS deployment.

Traveler Information - Traveler information provides travelers with the ability to make an intelligent choice regarding mode, route and travel time through a wide range of distribution methods. This includes, but is not limited to websites, variable message signs, kiosks, television, radio, phone, and highway advisory radio. It uses both static and real-time information.

Incident Management - The freeway and arterial incident management plan covers operation of any function, device or system that is dedicated to the response to or monitoring of incidents on arterials and freeways. Early detection and a coordinated effort to respond to and clear roadway incidents can greatly reduce their impact on congestion and delay.

Transportation Management - The freeway and arterial transportation management plan covers the operation of all functions, devices and systems installed or developed for managing freeways and arterials. It includes the implementation of transportation management centers for the freeway and arterial network for the coordinated management of the transportation system.

Transit Priority - Public transit plays an important role in passenger transportation in Clark County. The C-TRAN bus system carries over six million passengers per year on 29 routes. Giving priority for buses at traffic signals can make transit more attractive to travelers by helping make bus travel times shorter and more consistent.

Transit Operation and Management - The two key components of transit operation and management are: (1) transit traveler information systems and (2) transit agency operations and management. Transit traveler information systems can deliver real-time bus arrival information to transit patrons using changeable message signs, the internet and other communication devices. Transit operation and management tools use advanced technology to help transit providers increase efficiency and improve quality of service provided to the public.

The VAST Implementation Plan is a twenty-year project list developed around the initiatives above and is based on a regional ITS architecture, or blueprint, developed in cooperation with the ITS

stakeholders. The ITS architecture provides agencies with a high level physical representation of the important interfaces and major components of the system to ensure an integrated system. It provides a high-level structure around the processes, data flows, and connections between the ITS elements.

The Implementation Plan is consistent with the architecture and contains a description of each project, its priority, estimated costs and benefits and its relationship with other projects in the plan. There is also an Implementation Schedule for the plan that lists in general short, medium, and long-term time frames. The short-term projects include interconnected and adaptive signal control, freeway cameras and roadway detection, variable message signs, a traveler information system, and a traffic management center.

TRANSIT

Transit system improvements are supported in the MTP. The transit transportation mode can support the land use goals established in the GMA Plans that envision denser developments in growth centers and in primary transportation corridors. Transit is also important in meeting the mobility needs of the transit dependent; those unable to drive automobiles because of age, infirmity, disability or low income. C-TRAN outlines a program for development of the transit system in their publication *C-TRAN Transit Development Plan (TDP)* which the MTP supports. The latest version of C-TRAN TDP covers the years 2002 to 2008. Future development of the transit system will be shaped largely by funding capability. The transit system may also be shaped by future efforts to develop a light rail loop within Clark County as recommended by the I-5 Partnership in 2002 (see MTP Strategic Plan in the MTP Appendix. Land uses established in the Growth Management Plans of local jurisdictions will also influence the development of the transit system. Transit oriented development that allows for easy access to transit service can provide for the optimal transit development scenario to reinforce likelihood of success for transit service. C-TRAN relies on its Level of Service Indicators matrix (see figure 3-18, Chapter 3) in determining the feasibility of transit service expansion. C-TRAN also outlines plans for future transit service in its publication, *C-TRAN Model Transit Sub-Element and Capital Facilities Plan* (C-TRAN, May 1994, Revised). Over the MTP planning period a 30% increase in annual transit revenue service hours is forecast from 260,482 service hours in 2000 to about 339,000 service hours by 2023; a growth rate that averages 1.15% growth per year and does not keep up with the forecast population growth rate. With the loss of Motor Vehicle Excise Tax (MVET) as a revenue source for transit system operations beginning in 2000, expansion of service hours is jeopardized unless new revenues are forthcoming. Expansion of service hours can only take place with increase in funding.

JOBS ACCESS/REVERSE COMMUTE (JARC) AND WELFARE TO WORK

The RTC Board of Directors adopted the Area-Wide Jobs Access and Reverse Commute (JARC) Plan in August 2002. JARC grant funding will help C-TRAN to provide transportation to workers in the high tech industrial area of east county.

Transportation is one of the main challenges facing people making the transition from welfare to work. In support of that transition, the U.S. Department of Transportation in cooperation in other federal social service agencies is encouraging communities to plan and implement seamless and integrated transportation systems and services that address the numerous welfare to work transportation challenges.

C-TRAN has taken the lead among transportation providers in coordinating with the region's social service providers, including Washington Department of Social and Health Services and the Clark County Human Services Council, to develop a regional welfare to work transportation plan and pursue program grant funding. Program elements of the welfare to work transportation plan may include: supporting and developing services such as connector services to mass transit; vanpools; sharing buses with elderly and youth programs; coordinated human services and public transit transportation resources; employer provided transportation; Geographic Information System (GIS) based ride matching; guaranteed ride home programs; and public-private transportation partnerships. Some of these programs currently exist, and the outcome of the welfare to work plan will encourage coordinating the services into a seamless system to address the transportation problems for the region's welfare recipients and other low income persons.

HIGH CAPACITY TRANSPORTATION (HCT)

The development of HCT is supported in the MTP to increase the transit carrying capacity of principal transit routes as a strategy to avoid having to provide increased highway capacity (refer to Transportation Management Areas (TMA's) and Congestion Management System (CMS) section below). In the MTP segments of the I-5 corridor, the I-205 corridor and the SR-500 corridor are designated as High Capacity Transportation (HCT) Corridors.

The history of Light Rail Transit (LRT) planning in the region includes study of high capacity transit options advanced in the South/North High Capacity Transit Corridor Study. A *Tier I Recommendation Report*, published by Metro, September 14, 1994, recommended that Light Rail Transit be developed in the I-5 corridor to Clark County with Phase I terminating in the vicinity of NE 99th Street and Phase II terminating in the vicinity of NE 134th Street. On July 19, 1994, Metro released the *South North Transit Corridor Study, Draft Briefing Document, Tier I Technical Summary Report* to support the South/North HCT Corridor study recommendations. In 1995 the Clark County voters voted no to funding LRT development. A Draft Environmental Impact Statement (DEIS) was prepared through a coordinated process led by Metro, Portland with a northern terminus in the vicinity of Clark College. The purpose of the DEIS is to identify and disclose anticipated impacts of a potential light rail line from the Clackamas Town Center area to Clark County compared to a "No-build" alternative. Alternatives and options were described in detail in the *South/North Corridor Project Draft Environmental Impact Statement* (FTA/Metro, February 1998). FTA/Metro issued a South/North Corridor Project Supplemental Draft Environmental Impact Statement in April 1999. The construction of the I-5 MAX line to the Expo Center in Oregon is now underway.

The I-5 Partnership recommends the development of a LRT Loop within Clark County to provide for internal Clark County trips as well as cross-river trips (see MTP Strategic Plan, MTP Appendix).

COMMUTER RAIL/RAIL CAPACITY ISSUES

RTC completed the Commuter Rail Feasibility Study in May 1999. The purpose of the Study was to determine if commuter rail has the potential to serve as a low cost option to improve bi-state travel mobility by making more effective use of the existing Burlington Northern Santa Fe rail transportation corridor between Vancouver and Portland. Commuter rail provides passenger service by shared use of rail tracks with freight operators and other rail users. The Study examined critical issues in the implementation of commuter rail and included: schedule reliability, operations, the

impact of shared use with freight and inter city passenger needs, capital and operating costs, and ridership.

The Study concluded that, in a five year horizon, moderate levels of commuter rail service could be implemented between Vancouver and Portland with minor rail capacity improvements. By 2013, however, any level of commuter rail service would require a dedicated passenger track to accommodate the commuter service and the expected increases in freight and intercity passenger trains. The findings of this feasibility study indicate that a commuter rail system should not be pursued unless it is determined that a major rail investment necessary to support future intercity passenger and freight rail growth in the corridor is to be made. This rail corridor is severely constrained in terms of how much growth it can support without major capital investment. The commuter rail operations added a relatively small number of trips to the system but enough to trigger the requirement for a dedicated passenger alignment. Current plans for intercity passenger and freight growth could trigger the need for major capacity improvements before the 2018 horizon year. The results of this Study have created the awareness of the need to initiate regional discussion about long-term rail capacity issues affecting freight and passenger needs. The capacity constraints in this corridor need to be discussed further, not only in the context of the commuter rail system concept, but also as they relate to the rapid growth of rail freight traffic in the corridor and plans for greatly increased intercity passenger service.

In 2002 the question of commuter rail was again revisited as part of the I-5 Partnership. Findings included that commuter rail service cannot operate effectively on the freight rail network over the next 10 to 20 years, even with the identified incremental and additional network improvements commuter rail service could be instituted only on a separated passenger rail-only network. A separate passenger rail-only high speed rail system would improve intercity passenger rail service and could drive the feasibility of commuter rail. The cost of separated passenger network could be of the order of magnitude of \$1.5 to \$1.7 billion.

TRANSPORTATION MANAGEMENT AREAS (TMA's)

The Clark County region has been designated as a Transportation Management Area under ISTEA and TEA-21 because the region has a population greater than 200,000. In addition to meeting all the specified metropolitan transportation planning process requirements, MPO's representing Transportation Management Areas must meet additional requirements. In TMAs, the MPO must have a **Congestion Management System** that provides for the effective management of new and existing facilities through the use of travel demand reduction and operational management strategies. In TMAs, such as the Clark County region, which have been classified as non-attainment for ozone and/or carbon monoxide, highway capacity expansion projects that result in a significant increase in single occupancy vehicles can only be programmed if consistent with the Congestion Management System. The CMS acts as the process for identifying deficient regional travel corridors, for evaluating non-SOV alternatives to address congestion, and for managing the performance of the system.

CONGESTION MANAGEMENT SYSTEM (CMS)

The Congestion Management System (CMS) for Clark County was developed and operational by the deadline of October 1, 1995. The CMS identifies projects and programs for consideration in the metropolitan planning process. In November 1993, RTC released the *Intermodal Surface*

Transportation Efficiency Act, Transportation Management Systems for: Traffic Congestion, Public Transportation Facilities and Equipment, Intermodal Transportation Facilities and System, Phase I, Final Report. In October 1994, the *CMS Phase I Compliance Statement and Work Plan* was issued. Elements of the CMS include the identified CMS network performance measures and data monitoring plan as described in the two reports mentioned above. The CMS network is a sub-set of the regional transportation system; a set of 21 transportation corridors to be monitored and evaluated on an ongoing basis as part of the CMS. The *RTC Board adopted the Southwest Washington ISTEA Transportation Management Systems, Phase II Final Report, which contains the CMS*, on May 2, 1995 (RTC Board Resolution 05-95-14).

The CMS is intended to be an evaluation tool for monitoring traffic congestion and for identifying improvement strategies. The CMS allows for the systematic monitoring of performance, identification of deficiencies, and the evaluation and recommendation of strategies. The evaluation becomes a part of MTP development. Performance of the CMS network is monitored on an annual basis as new traffic volume data is available.

The CMS identifies a set of strategies that address regional congestion problems for consideration within the MTP process. As part of this process, the CMS strategies are weighed against other MTP goals and objectives. The recommendation of a strategy within the CMS to manage traffic congestion does not mean automatic implementation and incorporation into the MTP. It is recognized that selecting project priorities involves the consideration of many factors, of which congestion relief is just one.

ENVIRONMENTAL ISSUES

AIR QUALITY

The Southwest Clean Air Agency (SWCAA) has developed, as supplements to the State Implementation Plan, two Maintenance Plans; 1) for Carbon Monoxide (CO), and 2) for Ozone (O₃). In October, 1996 the CO Maintenance Plan and in April 1997 the Environmental Protection Agency (EPA) approved the Ozone Maintenance Plan. Mobile source strategies contained in the Maintenance Plans were endorsed for implementation by the RTC Board of Directors (Resolution 02-96-04). Prior to this the Vancouver region was classified as a 'moderate' non-attainment area for carbon monoxide air pollutants and a 'marginal' non-attainment area for ozone. Mobile emissions are a significant source of the region's air quality problems. As a result, transportation planning and project programming cannot occur without consideration for air quality impacts.

Mobile source emissions can be minimized through increased use of non-motorized transportation modes, through increased transit use, through transportation systems management measures (such as inter-connecting traffic signals and enhanced timing of signals) and travel demand management techniques (such as work flex-time, parking charges, carpooling and vanpooling programs); all supported by the MTP. Mobile emissions can also be reduced through technology-based transportation command and control measures, such as enhanced emissions testing (I/M) programs, expansion of I/M and fuel requirements. These types of strategies are called transportation control measures (TCM's).

RTC worked with Washington State Department of Ecology (DOE) on development of methodology for mobile source emissions analysis and used the regional travel model data to develop mobile

source emissions inventories. Transportation strategies identified in the SIP for the Vancouver Air Quality Maintenance Area include:

- expanded transit service
- an emissions testing (I/M) program for the area of Clark County within the Air Quality Maintenance Area (AQMA).

These strategies are implemented in efforts to maintain National Ambient Air Quality Standards (NAAQS).

In the Maintenance Plans an emissions “budget” is established for all sources of emissions that are not to be exceeded. This budget has allocated allowable emissions from mobile, area, and point sources. In order to demonstrate that emissions stay within the budget during the maintenance period, the Maintenance Plans identify emission control measures for each of the three sources and these must be implemented during the ten-year period. The range of strategies in the Maintenance Plan includes transportation control measures to limit mobile source emissions. If the budget is exceeded, additional contingency control measures must be implemented to lessen the emissions.

Both the MTP and TIP undergo air quality conformity analysis to demonstrate that they are within the mobile emissions budget contained in the Maintenance Plans before they are adopted. Projects can only be programmed in the TIP if they come from a conforming *MTP*. A determination of conformity of the *Metropolitan Transportation Plan* with the federal Clean Air Act, as amended in 1990, and the Washington Clean Air Act can be found in Appendix A of this document. Conformity with the Clean Air Act is also addressed in the metropolitan Transportation Improvement Program for the Clark County region. At the project level, non-exempt transportation projects have to undergo conformity analysis to show they meet federal and state air quality standards before completion of the design phase.

WATER QUALITY

Transportation projects must be mindful of water quality impacts. Water quality is a significant issue in the Pacific Northwest. Transportation projects often include measures to mitigate for the construction of impervious surfaces. Bioswales and street trees are becoming part of the design for certain transportation projects. Another issue that relates to water quality is the listing of certain Pacific salmon species under the Endangered Species Act.

MTP REGIONAL SYSTEM IMPROVEMENTS AND PRIORITIZATION PROCESS

Federal and state legislation, together with citizen input, has prompted the identification and implementation of alternative transportation solutions. Alternative solutions provide a way to avoid increasing capacity of the highway system through road widening projects. The MTP provides for strategies and solutions to meet regional travel demand and to develop a balanced regional transportation system over the 20-year planning period. Figure 5-1 is a map showing identified capacity improvements on the regional transportation system. The map shows the location of highway capacity expansion projects identified as needed due to safety and/or level of service issues. Limited transit route expansion is marked on Figure 3-3, *Designated Regional Transportation System*, in Chapter 3. Appendix A provides a list of needed improvements, both on and off the regional transportation system, which have been assumed in the regional travel forecasting model

process for MTP development and its accompanying air quality conformity analysis. The list focuses on system expansion projects for it is these that are most readily incorporated into the regional travel forecasting model and their impacts measured. The MTP Appendix also outlines the wide array of transportation system improvements, which will contribute to the development of a balanced regional transportation system. Even with the extensive list of transportation improvements, increased congestion can be expected on Clark County's transportation system by the year 2023. In many of the transportation corridors, further system expansion through widening of existing highways will not be feasible. Therefore, it is imperative that this region continue to develop a more balanced transportation system to encourage use of alternative transportation modes to the Single Occupant Vehicle.

Following adoption of the MTP for Clark County in December 1997, a prioritization process was initiated as a result of concerns that funding for transportation "mobility" improvements is limited compared with growing needs. The 1997 process was described in the RTC technical report, *Metropolitan Transportation Plan for Clark County, Prioritization of MTP Projects (RTC, October, 1998. RTC Board Resolution 10-98-16)*. A prioritization process helps the region to make most effective use of limited transportation funding to meet transportation system improvement needs.

In December 2001 the RTC Board again reviewed regional priorities. "Mobility" type improvements were again the prime focus of the prioritization process as these are the projects that the region finds increasingly difficult to fund after maintenance, preservation and safety needs are taken care of. In a rapidly growing, urbanizing region such as Clark County there is need for significant investment in "mobility" projects to complete the arterial street system and to improve the design standard of facilities to cope with urban traffic levels. It is recognized that Transportation System Management and Transportation Demand Management strategies can contribute toward system capacity preservation and are considered in the prioritization process (refer to Appendix A2 of the MTP; *"MTP Strategies: Projects to Preserve System Capacity, including Transportation Demand Management (TDM) Strategies"*). It is acknowledged that all of the projects evaluated in the MTP prioritization process are needed within the 20-year horizon of the Plan to attain reasonable transportation system performance. However, with limited funding availability, it is prudent to reach regional consensus on the highest priorities.

The prioritization process takes a strategic systems approach to determine transportation needs. Steps in the process for prioritization of regional transportation projects include: 1) Development of a shared understanding of transportation system needs through review of existing and future transportation system performance, 2) Review major transportation policies governing regional transportation system development, 3) Agree on key policy principles for project prioritization, 4) Establish criteria for project evaluation, 5) Initial evaluation of projects based on criteria (existing growth management land use plans, growth forecasts and results from the regional travel forecasting model are used as the basis for needs evaluation), 6) Re-evaluate projects (based on iterative performance analysis), 7) Consider project staging, finance and priority level, and 8) Recommendation of MTP regional priority transportation projects.

The following key policy issues again emerged in 2001 as the most important to emphasize in terms of project prioritization: 1) Economic Development, 2) Land Use and Transportation System Performance, 3) Transportation Demand Management (TDM), 4) Funding and 5) Bi-state Transportation Strategy. Economic development is the prime criteria for project prioritization. The results of the 2001 prioritization process is provided in Table A-3 in Appendix A-1.

The project prioritization process is dynamic and project priorities will be reviewed periodically to consider emerging trends and results and recommendations from ongoing transportation studies. Recent and ongoing studies are listed at the back of the MTP. The list of highest priority projects will not constitute the final determination to actually fund the projects. The funding and phasing decisions are carried out during the Metropolitan Transportation Improvement Program (MTIP) development process. Transportation improvements require programming of funding which is carried out in the Metropolitan Transportation Improvement Program (MTIP) for the metropolitan area. It is in the regional MTIP that federal funds are programmed. Projects which use local funding are programmed in the local Transportation Improvement Programs, developed each year by individual local jurisdictions.

BI-STATE TRANSPORTATION

PORTLAND-VANCOUVER I-5 TRANSPORTATION AND TRADE PARTNERSHIP

The Portland-Vancouver I-5 Transportation and Trade Partnership study concluded in 2002. Key policy recommendations are incorporated into the planning process and projects are included in the MTP Strategic Plan (see Appendix B).

Figure 5-1: MTP Regional System Improvements

